



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,881	06/09/2000	Jeongmin Moon	3430-0105P	1734

7590 05/24/2002

Birch Stewart Kolasch & Birch LLP
P O Box 747
Falls Church, VA 22040-0747

EXAMINER

NGUYEN, HOAN C

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 05/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/589,881

Applicant(s)

MOON, JEONGMIN

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 5, 12, 13, 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11 and 14-21, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant has cancelled claims 5, 12, 13 and 22.

Response to Amendment

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

New limitation is added in new independent claim:

- each of the convex portions having a substantially planar surface which is substantially parallel to the lower surface, and an angle between the lower surface and a surface connecting the planar surface of the convex portion is in a range of 90° to 100° (claims 1, 10 and 11);

Art Unit: 2871

- the light directing device includes a plurality of portions extending toward the reflector, a spacing between the portions decreasing along the length of the reflector with increasing distance from the light source (claim 21);

The rejections of dependent claims will use the same old references. Therefore, new grounds of rejection have been made in this FINAL office action as follows:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1-4, 6-11 and 14-21, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Shinji et al. (US6259854B1).

In regard to claims 1, 2 and 10, Shinji et al. (Figs. 1 a-1 5b) disclose an auxiliary light source device comprising:

- a light source 1;

- a light reflecting member (reflector 4) which guides light from the light source into the light directing member,
- a light directing member for directing incident light from the light source toward the reflector, the light directing member including
 - a lower surface having a plurality of convex portions extending from the lower surface, each of the convex portions having a substantially planar surface which is substantially parallel to the lower surface, and an angle between the lower surface and a surface connecting the planar surface of the convex portion is in a range of 90° to 100° since slope angle $\delta > 5^\circ$ (col. 5, lines 60-62).

In regard to claims 21 and 24, Shinji et al. (Figs. 1 a-1 5b) disclose an auxiliary light source device comprising:

- a light source extending along a width of the reflector to emit light along a length of the reflector;
- a light directing device located above the reflector and adjacent to the light source to direct light from the light source to the reflector such that a light distribution of light directed by the light directing device is substantially uniform along the length of the reflector, and such that the directed light is substantially perpendicular to the reflector,
- the light-directing device includes a plurality of portions extending toward the reflector, spacing between the portions decreasing along the length of the reflector with increasing distance from the light source.

In regard to claims 11 and 14, Shinji et al. (Figs. 1 a-1 5b) disclose an auxiliary light source device comprising:

- an upper reflective surface to reflect impinging light above a certain incidence angle;
- a lower reflective surface having a plurality of convex portions extending toward the reflector to direct light from the auxiliary light source device to the reflector;
- an entry surface connecting the upper and lower reflective surfaces through which light from a light source enters, wherein
 - each convex portion includes a planar portion and sides connecting the planar portion with the lower reflective surface, and an angle between the lower surface and the sides is in a range of 90° to 100° since slope angle $\delta > 5^\circ$ (col. 5, lines 60-620;
 - a planar portion is substantially parallel to the lower reflective surface.

In regard to claims 3 and 19, Shinji et al. (Fig. 15b) disclose an auxiliary light source device, wherein spacing between the convex portions decreases with increasing distance from the light source (Fig. 15b).

In regard to claims 4, 20 and 23, Shinji et al. (Fig. 15a) disclose the spacing between adjacent convex portions of lower surface of the light-directing member is $100\mu\text{m}$ (Fig. 15a) that is in a range of $10\mu\text{m}$ to $1000\mu\text{m}$ and a width W of each portion is $20\mu\text{m} \leq W \leq 200\mu\text{m}$ (abstract), which covers a width less than $100\mu\text{m}$.

In regard to claims 6 and 15, Shinji et al. (Fig. 1b) disclose the planar surface of each convex portion has a cross-section of substantially circular shape (Fig. 1b).

In regard to claims 7 and 16, Shinji et al. (Fig. 1f) disclose the planar surface of each convex portion has a cross section of rectangular shape (Fig. 1f).

In regard to claims 8 and 17, Shinji et al. (Fig. 1d or 1g) disclose the plane surface of the plurality of convex portions has a bar shape extending perpendicular to a direction of light propagation in the light directing member 11 and along substantially an entire width of the reflective LCD device.

In regard to claim 9, Shinji et al. (Fig. 15b) disclose (Table 1) a distance/height between the lower surface and the planar surface of each convex portion is $12\mu\text{m}$ and $20\mu\text{m}$ that is less than $50\mu\text{m}$.

In regard to claim 18, Shinji et al. (Fig. 15b) disclose a plurality of convex portion extending from the lower surface to ensure an uniform distribution of light along a length of the device.

Response to Arguments

1. Applicant's arguments filed on Feb. 4, 2002 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

- a. Shinji et al. teach away from 90° to 100° angle range between surface and sides. This is part of a disadvantageous case where "scattering efficiency become low."

- b. Shinji et al. at column 10, lines 39-467 (?), describes a "density distribution of patterns" which is fundamentally different than the spacing set forth in the present invention.

Examiner's responses to Applicants' ONLY arguments are follows:

- a. Shinji et al. teach the slope angle of the trapezoid $\delta \geq 5^\circ$ with varying the width W and height H of trapezoid protrusions. To improve scattering efficiency, the ratio H/W has to be greater than 0.6 without changing the slope angle. The low scattering efficiency may be due to ratio H/W = 0.1 or 0.6. Therefore, three fundamental criteria to improve the scattering efficiency are varying the slope angle, the width and the height of trapezoid.
- b. Shinji et al. (column 10, lines 39-46) disclose a "density distribution of patterns" with trapezoidal cross-section as shown in Figs. 1b-1g, which are not fundamentally different than the spacing set forth (Figs. 6a-6c) in the present invention although there is fundamentally different manufacturing method.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

Art Unit: 2871

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SIKES L WILLIAM can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8178 for regular communications and (703) 308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

chn
May 21, 2002


TOANTON
PRIMARY EXAMINER